Technical Issues Committee (TIC)
Meeting Notes
11 April 2006

Attendees:
Dr. Karl Longley, Central Valley Water Board
Bill McKinney, East San Joaquin Water Quality Coalition
Dan Waligora, Department of Fish and Game
G. Fred Lee, G. Fred Lee and Associates
John Meek, San Joaquin and Delta Water Quality Coalition
Maryam Khosravifard, Department of Food and Agriculture
Stephanie Fong, Central Valley Water Board
Dania Huggins, Central Valley Water Board
Dave Ceppos, Center for Collaborative Policy (CCP)
Joe McGahan, Westside San Joaquin River Watershed Coalition
Bill Croyle, Central Valley Water Board
Melissa Morris, Central Valley Water Board
Mike Johnson, UC Davis
Sandy Nurse, Sierra Foothill Laboratory
Stephen Clark, Pacific EcoRisk
Marshall Lee, Department of Pesticide Regulation
Lisa Hung Edmunds, URS
Wendy Cohen, Central Valley Water Board
John Swanson, Central Valley Water Board
Diana Messina, Central Valley Water Board

Current Action Items

1. Central Valley Water Board staff will provide comments regarding the TIC Recommendation #1 at the 9 May 2006 TIC meeting. If there are questions or concerns from staff regarding the recommendation they can be discussed at that time.

2. Staff will address the numeric interpretation of narrative quality objectives in a preliminary framing discussion at the May TIC meeting.

3. All TIC participants assisting Dania Huggins in the identification and compilation of lab costs will have their information to Dania by close of business 8 May 2006. Dania will send a reminder email to said parties defining the May due date.

5. Staff will prepare and present a comparison table of the Irrigated Lands Program (ILP) QAPP and SWAMP QAPP at the 9 May TIC meeting.

6. Central Valley Water Board Staff will re-introduce to the TIC the objectives behind the requirement for utilizing a SWAMP comparable format at the 9 May meeting.

7. Stephen Clark will work with the Laboratory Round Table to provide a comparison of the types of entries required by the SWAMP comparable database with a minimal submittal that might be considered necessary for compliance evaluation with the ILP. Real world examples of data entries will be used to the extent feasible. This action item will take place at either the May or the June meeting to ensure the availability of representatives from SWAMP.

8. The TIC critical path will be revised to reflect item 9 above.

9. Comments received on Triggers Group Recommendations 2, 3, and 4 will be addressed by the Focus Group, and the revisions will be recirculated to the TIC with the goal of ratifying these Recommendations on 9 May 2006.

A. Announcements and Final TIC Recommendation #1

A copy of the final TIC Recommendation regarding toxicity samples with less than 50% difference from laboratory control was distributed at the meeting and has been forwarded to Central Valley Water Board staff for consideration. There was little discussion regarding the recommendations, which had been fully considered at the previous TIC meetings. Comments regarding the proposal will be provided by staff at the 9 May 2006 meeting.

The 13 April Sediment Quality Objectives Stakeholder meeting was announced at the start of the TIC meeting. Individuals that are interested in knowing more about this process, which is being led by the State Water Resources Control Board, may contact Chris Beegan at (916) 341-5577, or cbeegan@waterboards.ca.gov.

During the meeting Bill Croyle announced that based on the outcomes of the Policy Work Group meetings, the Irrigated Lands Waiver renewal document would be posted for public comment by 19 April 2006, and will be brought to the Central Valley Water Board at the 22 June 2006 meeting.

B. **Action Items**

The list of Action Items that were provided in the 14 March 2006 draft meeting notes were reviewed by Dave Ceppos, CCP. Some items have not been completed and remain on the Action Item list. Others will be added as they come up. Furthermore, it was decided that the Action Items list was a good method to keep track of progress, and therefore completed items will not be removed from the list, but rather it will be noted that they are 'Complete'. New Action Items that resulted from this April meeting are provided, above; pending Action Items are provided at the end of this meeting summary

C. Sediment Focus Group Update

John Swanson discussed the progress of the Sediment Toxicity Focus Group, and described telemeetings to discuss recommendations for the Coalition Group MRP had been held on 2 February 2006, and 24 March 2006. The group has made significant progress and is ready to present several recommendations to the TIC. One additional focus group meeting will be scheduled prior to the May TIC meeting, to refine the language and format for the formal presentation of recommendations to the TIC in May. The Sediment Focus Group will utilize the

same problem statement – recommendations format that had been developed via the Triggers Focus Group.

D. Laboratory Round Table Focus Group Update

Dania Huggins discussed the progress of the Focus Group that addresses laboratory-related issues, such as PQLs, QAPPs and analytical procedures appropriate to the program. Since the last TIC meeting, one Focus Group meeting was held on 30 March 2006. During this meeting the main items discussed were the SWAMP target reporting limits, and some recommendations for changes to the Minimum Monitoring Requirements Table 1, that is in the draft coalition group MRP. The group will follow the same procedure as the Toxicity Triggers Focus Group for their recommendations to the TIC. Dania Huggins has also been requesting information from laboratories regarding cost of laboratory procedures and the cost of electronic data delivery of results. The information that she is able to receive will be provided at the next TIC meeting on 9 May 2006.

Bill McKinney suggested that a performance metric relationship be developed between a laboratory's previous QA/QC performance (e.g. number of errors) and expectations on subsequent performance. The intended goal of such an approach is to hold laboratories comparatively accountable for errors based on previous performance, and to minimize liability risks to laboratories that reflect high QA/QC standards.

There was discussion about electronic data submittal and utilizing a SWAMP comparable database for the ILP Program, and the amount of time required to do so, resulting in greater cost. It was decided that the issue was not well understood by many of the TIC participants. Stephen Clark agreed to provide a table that would compare the types of entries required by the SWAMP comparable database with the minimal information necessary to determine compliance with the Irrigated Lands Program. Staff agreed to provide the objectives (and legalities) behind the need for utilizing a SWAMP comparable format.

E. Triggers Focus Group Recommendation for Chemistry and Bacteriological Exceedances.

Stephen Clark presented the second recommendation put forth by the Triggers Focus Group. This Recommendation discussed alternatives for the action that should be taken when analytical results – such as pesticides, metals and bacteriological analyses – result in exceedances. This recommendation, (attached) which applies both to irrigation season monitoring and storm season monitoring, considered the unique challenges to exceedances response that are the result of the fact that laboratory results are not received by coalition before 30 days, if not more. Some suggestions for minor language changes were made at the meeting. These suggestions included a more specific refinement of the term "source" as a qualifying term in the text of the recommendation. Additional suggestions included acknowledging in subsequent actions that an exceedance may be the result of standard land application methods, rather that a discrete point source from a non-compliant farmer and that such situations may require a variety of responses, rather than continued monitoring (e.g. education). The Recommendation will be brought forth to the 9 May 2006 meeting, along with the minor language changes for consideration as a final recommendation by the TIC.

F. Triggers Focus Group Recommendation for Field Measurement Exceedances.
Stephen Clark presented the third recommendation put forth by the Triggers Focus Group. This Recommendation discussed alternatives for the action that should be taken when exceedances in field measurements take place, both during storm event and irrigation season monitoring events. This recommendation (attached) considered the unique nature of field measurements in that they provide immediate information regarding exceedances to field sampling crews. Some suggestions for minor language changes (similar to changes in item E above) were made at the meeting. The Recommendation will be brought forth to the 9 May 2006 meeting, along with the minor language changes for consideration as a final recommendation by the TIC.

G. Triggers Focus Group Recommendation for initiating Storm Event Monitoring
On behalf of the Triggers Focus Group, Margie Lopez Read discussed the fourth recommendation that had been put forth. This recommendation (attached) had to do with the appropriate approach that should be used by Coalitions to initiate storm event monitoring. Some suggestions for minor language changes were made at the meeting. The Recommendation will be brought forth to the 9 May 2006 meeting, along with the minor language changes for consideration as a final recommendation by the TIC.

H. Critical Path Schedule
The TIC reviewed the revised Critical Path Schedule and some concern was expressed about the feasibility of meeting the timelines that were geared toward a completion by June 2006. The desire to complete the process as soon as possible was expressed by several participants, but the review of past activities indicates that a July 2006 completion date is most likely. Meeting the July completion date will still require a concerted effort by the Focus Groups and the TIC.

H. Next Meeting
The next meeting will be held on **9 May 2006**, and the participants agreed that a **full day meeting** will be necessary in order to address the proposed recommendations that will be coming forth at that time. It is anticipated that a 9:00 to 4:00 p.m. meeting will take place and that the meeting will include a working lunch.

Action Items Remaining from 11 April 2006 Meeting

1. TIC Members will develop alternative language to address concerns expressed about the Tentative MRP, page 8, last paragraph on Management Practices implementation. *(Item from February meeting – no recommendations received; no action has taken place)*

2. The SWAMP program will work with the Irrigated Lands Coalitions to 1) develop a crosswalk between ToxCalc and SWAMP, 2) provide training for utilizing the database, QAPP development, and 3) to solicit constructive comments and suggested changes for modifications that can be made to the database. *(Margie Lopez Read will communicate with Val Connor regarding the status of the crosswalk and training opportunities. No comments or suggestions received to date)*

3. TIC members wish to work on re-wording the ILP QAPP so that it is better coordinated with the SWAMP QAPP. A focus group (laboratory?) discussion for this will be arranged. *(Staff is preparing a comparison table between the two QAPPs, and this will be discussed at the 9 May 2006 TIC meeting)*

4. TIC members are going to provide comment on the studies that are used to provide numeric interpretation of narrative quality objectives. The appropriate focus group may be the Triggers Focus Group. *(Opinions expressed were that this item can be tabled in the interim, for later discussion. However, if numeric interpretations of narrative objectives are introduced by staff into the MRP, then the topic ought to be brought to the forefront of discussions at TIC meetings. Bill Croyle recommended that there be a brief opportunity at the 9 May 2006 meeting to discuss the issue of numeric interpretation of narrative quality objectives, in order to frame the issues associated with it. Further follow-up, if necessary, can be decided at that time.*

5. The Triggers group will continue to expand upon and improve the Options Table for storm water that was presented, and to draft up Problem Statements and language for a recommendation. *(being done)*

6. Language in the Tentative MRP will need to be clarified by staff so that the submittal of data for the ILP is consistent with SWAMP requirements . *(to be added by Staff with next version of a tentative MRP)*

7. Stephen Clark of Pacific EcoRisk, and Sandy Nurse of Sierra Foothill Labs will work on developing cost-estimates for a laboratory to submit electronic data in a SWAMP comparable format. *(Information is still being collected – Dania Huggins will facilitate the compilation of information received from laboratories)*

8. Water Board staff will organize a presentation by Fish and Game regarding the Bioassessment project in Central Valley agriculture lands. *(This will take place when Fish and Game staff is ready to provide the presentation – probably summer of '06)*

9. CCP will provide recommendations to staff about comment tracking protocols and methods to enhance readability of subsequent MRP recommendations/revisions from the TIC and Staff. *(to take place in near future)*

10. Staff and the TIC will further discuss the term "source" in a future meeting to ensure that there is shared meaning on the term and that there is clarity on it's use. *(ideas for language alternatives will be shared via email communications and shared at the next TIC meeting)*

11. Focus groups will continue to meet to provide proposed recommendations for the 11 April meeting. *(done and will be continued)*

12. Central Valley Water Board staff will provide comments regarding the TIC Recommendation #1 at the 9 May 2006 TIC meeting. If there are questions or concerns from staff regarding the recommendation they can be discussed at that time.

TRIGGERS FOCUS GROUP
FOLLOW-UP MONITORING FOR ANALYTICAL CHEMISTRY AND BACTERIOLOGICAL EXCEEDANCES
5 April 2006

OBJECTIVE OF FOLLOW UP SAMPLING FOR ANALYTICAL CHEMISTRY AND BACTERIOLOGICAL EXCEEDANCES: The objective of this requirement is to obtain information regarding the source, frequency, and magnitude of the water quality exceedance.

PROBLEM STATEMENT: The Compliance Monitoring section of the draft Coalition Group MRP requires re-sampling at a monitoring site whenever a sample exceeds a receiving water limitation or water quality objective. Specifically, the draft MRP indicates that "the Coalition shall re-sample the monitoring site(s) where the exceedance was reported for each constituent that exceeds a receiving water limitation or water quality objective and at two or more sites upstream of the monitoring site with the exceedance (a total of three or more samples) within 72 hours of the submittal of the Exceedance Report….The Coalition Group will continue this re-sampling strategy for each detection that is an exceedance in the re-sampling results, until re-sampling results are below the receiving water limitation that implements the appropriate Basin Plan's water quality objective."

This requirement will be impossible to achieve for a given storm event and difficult to achieve for irrigation season monitoring, given that the standard turn around time (TAT) for the receipt of *analytical chemistry and bacteriological data* is typically 30 days; it is not unusual to have a TAT that goes beyond 30 days. Therefore, before the data can be received by the Coalition, the storm event will have ended. Similarly within irrigation season, the irrigation season sampling event may have already occurred before the data from the previous event is received by the Coalition. Under this circumstance, the next routine monitoring event following the observation of a water quality exceedance would in essence qualify as the re-sampling of the original site where the exceedances occurred. Any additional upstream monitoring would be difficult to plan for, as there would be insufficient time to prepare monitoring crews and notify laboratories of the additional work.

Furthermore, re-sampling to identify the source of the exceedance some 30-40 days after the sample was collected that originally triggered the exceedance is likely to result in data that cannot be linked to the original exceedance (e.g., upstream identification of the "source" of the exceedance) due to the TAT and the time that would have passed between the original sample collection and the reporting of the exceedance.

Therefore, the Triggers Focus Group is making the following recommendation to the TIC:
RECOMMENDATION:
When an exceedance of a receiving water limitation or water quality objective is reported for an *analytical chemistry or bacteriological result*, the Coalition must have a <u>pre-determined</u> follow-up plan in their Monitoring and Reporting Program Plan. This approach will provide flexibility for Coalitions to design site- (or watershed) specific, science-based approaches to address this requirement. It is expected that the proposed approach will be based on historical monitoring

data and current pesticide use data. Follow-up monitoring approaches may include, but may not be limited to, monitoring at two upstream sites, re-sampling of the site with the water quality exceedance, use of historical data to design a re-sampling strategy, dialogue and data from the County Agriculture Commissioner, and re-sampling at the time of re-sampling for toxicity testing (i.e., if toxicity testing indicates that a specific class of contaminants may be involved with the toxicity).

It is recommended that the narrative in the draft Coalition Group MRP be changed to read: “the Coalition shall include a follow-up monitoring approach to address exceedances of receiving water limitation or water quality objectives for *analytical chemistry or bacteriological data* in their MRP Plan and shall implement the approach via the methods and within the timeline outlined in the individual Coalition MRP Plan approved by the Executive Officer of the Central Valley Water Board. The Coalition will continue implementing their follow-up monitoring approach until a source or sources of the water quality exceedance is identified via the methods and frequency proposed in the Coalition MRP.”

TRIGGERS FOCUS GROUP
FOLLOW UP SAMPLING FOR WATER QUALITY EXCEEDANCES OF FIELD PARAMETERS
5 April 2006

OBJECTIVE OF FOLLOW UP SAMPLING WATER QUALITY EXCEEDANCES OF FIELD PARAMETERS: The objective of this requirement is to obtain information regarding the source, frequency, and magnitude of the water quality exceedance.

PROBLEM STATEMENT: The Compliance Monitoring section of the draft Coalition Group MRP requires re-sampling at a monitoring site whenever a sample exceeds a receiving water limitation or water quality objective. Specifically, the draft MRP indicates that "the Coalition shall re-sample the monitoring site(s) where the exceedance was reported for each constituent that exceeds a receiving water limitation or water quality objective and at two or more sites upstream of the monitoring site with the exceedance (a total of three or more samples) within 72 hours of the submittal of the Exceedance Report….The Coalition Group will continue this re-sampling strategy for each detection that is an exceedance in the re-sampling results, until re-sampling results are below the receiving water limitation that implements the appropriate Basin Plan's water quality objective."

This requirement presents technical, scientific, and logistical challenges for Basin Plan exceedances of parameters measured in the field (e.g., pH, dissolved oxygen, and conductivity). Some of these parameters (e.g., pH and dissolved oxygen) may vary diurnally based on natural conditions alone. During daylight hours, when photosynthesis is occurring, dissolved oxygen levels rise. At night, respiration is the driving force, resulting in a decrease in dissolved oxygen. In a diurnal cycle, the lowest pH is expected at dawn because CO_2 produced by decomposition and aerobic respiration would have accumulated since the previous dusk. Conversely highest pH is expected during the daylight hours, because pH rises at the rate at which carbon dioxide is fixed by plants. Both pH and dissolved oxygen may also be affected by anthropogenic sources (e.g., elevated nutrients resulting in increased algae populations can result in elevated pH readings). Obviously, pH and dissolved oxygen data are indicators of other natural and potentially anthropogenic water quality parameters and conditions. Similarly, elevated conductivity may similarly be due to anthropogenic factors, as well as natural soil geological conditions. For this reason, a weight of evidence, broad-based approach should be considered when addressing water quality issues related to pH, dissolved oxygen, and conductivity.

Currently, a single measure of pH, dissolved oxygen, or conductivity that exceeds a Basin Plan objective is considered a water quality exceedance even if it cannot be determined from the single measurement if natural conditions or anthropogenic factors are responsible for the exceedance. The Basin Plan indicates, "in determining compliance with the water quality objective for pH, appropriate averaging periods may be applied provided that beneficial uses will be fully protected." However, the definition of what would comprise of an "appropriate averaging period" is not defined (e.g., multiple daily measurements, averaging monthly point measurements, etc.).

Therefore, the Triggers Focus Group is making the following recommendation to the TIC:
RECOMMENDATION:
When an exceedance of a receiving water limitation or water quality objective is reported for a field parameter result (e.g., *pH, dissolved oxygen, or conductivity*), the Coalition must have a pre-determined follow-up plan in their Monitoring and Reporting Program (MRP) Plan. This approach will provide flexibility for Coalitions to design site (or watershed) specific, science-based approaches to address this requirement. It is expected that the proposed approach will be based on historical monitoring data and possibly pesticide use data. Follow-up monitoring approaches may include, but may not be limited to, monitoring at two upstream sites, an evaluation of the source water (e.g., river or irrigation canal supply prior to entering the Coalition boundaries), re-sampling of the site with the water quality exceedance, moving upstream to identify the source on the day of the exceedance, and re-sampling at the time of re-sampling for toxicity testing (i.e., if toxicity testing indicates that a specific class of contaminants may be involved with the toxicity).

It is recommended that the narrative in the draft MRP Plan be changed to read: "the Coalition shall include a follow-up monitoring approach to address exceedances of receiving water limitation or water quality objectives for *field pH and dissolved oxygen data* in their MRP and shall implement the approach via the methods and within the timeline outlined in the Coalition MRP Plan approved by the Executive Officer of the Central Valley Water Board. The Coalition will continue implementing their follow-up monitoring approach until a source or sources of the water quality exceedance is identified via the methods and frequency proposed in the Coalition MRP. The results of field measurements, in conjunction with analytical chemistry results and site observations, should be collectively considered to provide a 'weight of evidence' approach toward identifying the source."

TRIGGERS FOCUS GROUP
RECOMMENDATION
TRIGGER FOR STORM WATER MONITORING
5 APRIL 2006

OBJECTIVE OF STORM WATER MONITORING: To determine the effects on water quality from agriculture activities caused by storm runoff.

PROBLEM STATEMENT: The draft Coalition Group MRP requires that Coalitions sample during two storm events, with the intent of determining the impact of agriculture practices in storm water runoff. The current language for assessment monitoring is described as follows in the draft Coalition Group MRP:

> *"Monitoring shall be conducted during the irrigation and storm seasons. The storm season coincides with dormant spray applications. In general, the irrigation season is March through August, but may start as early as February and extend to October. The storm season is December through February, but may include November and March. The MRP Plan shall describe the irrigation and storm seasons, propose specific irrigation and storm season monitoring periods for the region, and discuss when peak irrigation and storm discharges are likely to occur.*
>
> *Monitoring shall include, at a minimum, sampling two major storm events during each storm season, sampling monthly during each irrigation season, and evaluation of data, unless otherwise approved by the Executive Officer. The Coalition Group shall monitor each sampling site for a minimum of two years with a minimum of two samples for all the constituents listed in Table 1 of Section I.F Minimum Analytical Monitoring Requirements each year. If a monitoring site has an exceedance during the two years, the Coalition Group shall continue to sample the monitoring site beyond the initial two years and continue sampling until receiving written approval from the Executive Officer to discontinue sampling at the monitoring site."*

There are a variety of ways that Coalitions make the decision to collect samples during storm events. Uncertainties exist in selecting the two storm events that may be the most informative with respect to agriculture effects in storm water runoff. Some of the problems that occur with existing storm event monitoring are as follows:

1. Even though rain was predicted in one area of the Coalition, and did occur, some of the monitoring sites did not have sufficient runoff by the time the sampling crews arrived at the site.
2. In order to avoid the problem that occurs with #1, a minimum rainfall amount is offered in a Coalition MRP Plan. When the predicted rainfall did not meet certain criteria identified in the MRP Plan sampling was not initiated, although runoff did in fact occur. No storm event samples were collected.
3. Two storm *sampling* events were 24 hours apart, effectively sampling the same storm event.

4. Some Coalitions are effectively irrigating the crops during the winter, due to dry conditions, and irrigation season monitoring should be conducted during that time, rather than storm season monitoring.
5. There is a high level of ambiguity with respect to sample collection as it relates to the timing of winter herbicides on row crops, pesticide spraying on orchards, application of fertilizers or other management practices that might affect storm water runoff.
6. Some water bodies during high-level storm events can increase in flow so greatly that it becomes unsafe for field sampling crews to collect samples.
7. Making decisions regarding management practices based on two storm event samples per year is difficult. Due to the enormous variety of seasons, size and duration of storm events, timing of storm event to management practices, variations in soils and topography, and management practices through the Coalition region. Therefore, assessment of management practice effectiveness based on two samples per year will contain a high degree of uncertainty.

FOCUS GROUP RECOMMENDATION**:**
Coalitions can select from a variety of options and identify the option(s) in their MRP Plan that will be appropriate for their Coalition as a trigger for storm event monitoring. Some of these choices are listed in the Alternatives Table. Another option for the Coalitions would be to conduct a regularly scheduled and routine monitoring cycle throughout the 12 months of the year that is sufficient to capture information about the impact of agriculture through the storm season as well as the irrigation season. For example, a high frequency of water quality, physical, solid and nutrient monitoring per site (i.e. monthly) could be proposed along with less frequent site measurements for toxicity, pesticides, and metals (i.e., every other month).

Additionally, photo monitoring should always be conducted and submitted as part of the monitoring report. This will help validate instances where rainfall was insufficient to induce runoff, or where the flow increases in the water body were so great that collection of samples was not safe.

FOCUS GROUP PROPOSED LANGUAGE:
The Coalition Group must identify the monitoring frequency and measuring parameters that will be used to evaluate storm event runoff. Table XX (Alternatives Table) provides some suggestions for a monitoring frequency framework that could be used to meet the storm event monitoring objective, such as sampling at first flush, and next storm after agriculture practices occur. This may include developing a routine for monthly monitoring that will occur year round, 12 months of the year. If this routine monthly monitoring is utilized, then during storm seasons, the monthly monitoring will be tied to the first storm event that month. If no storm event occurs, the monthly monitoring shall take place at the end of the month.

The Coalitions Groups must propose their monitoring schedule that is suited to the individual characteristics (hydrology, topography, soils, etc.) in their MRP Plan.